Stress Urinary Incontinence: A Practical Approach

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Disclosures

- Speaker and advisory board for Pfizer and Astellas.
Learning Objectives

• To review normal bladder function
• To understand the impact of stress urinary incontinence on the patient
• To review the pathophysiology of stress urinary incontinence
• To develop an approach to the management of stress urinary incontinence
Bladder Function
Normal Bladder Physiology

- Bladder capacity 300-600 ml
- Daytime voiding frequency 6-8x
- Post-void residual 50-100 ml, increasing with age
- No leakage
- Minimal bothersome urgency
- No nocturia
Did You Know…

• Only one-third of women with urinary incontinence seek medical care.

• BUT! If approached by a healthcare professional, over 90% will admit to and want to discuss the problem.
Why Many People Cope Rather Than Seek Help

Patient misconceptions and fears:

- “It’s part of normal aging and everyday life”
- “My condition is not severe or frequent enough to treat”
- “It’s too embarrassing to discuss”
- “Treatment won’t help”
Prevalence of Urinary Incontinence

N=27,936.
Urinary Incontinence Is More Prevalent than Other Chronic Diseases in Women

- Incontinence: 35%
- Hypertension: 25%
- Depression: 20%
- Diabetes: 8%

4. NIDDK. Electronic Citation; 2001.
Urinary Incontinence: Impact on Quality of Life

• Impact on lifestyle and avoidance of activities
• Fear of losing bladder control
• Embarrassment
• Negative impact on relationships
• Increased dependence on caregivers
Urinary Incontinence: Impact on Morbidity

<table>
<thead>
<tr>
<th>Medical:</th>
<th>Social:</th>
</tr>
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<tbody>
<tr>
<td>– Decubitus ulcers</td>
<td>– Loss of self-esteem</td>
</tr>
<tr>
<td>– Skin rashes</td>
<td>– Social restriction</td>
</tr>
<tr>
<td>– UTI</td>
<td>– Depression</td>
</tr>
<tr>
<td>– Falls</td>
<td></td>
</tr>
<tr>
<td>– Perineal irritation</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Economic:</th>
<th></th>
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<tbody>
<tr>
<td>– Personal costs</td>
<td></td>
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<tr>
<td>– Societal costs</td>
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</table>
Reversible causes of incontinence (DIAPPERS)

- Delirium
- Infection (UTI)
- Atrophic vaginitis
- Pharmaceuticals (diuretics)
- Psychological
- Endocrine (DM)
- Restricted mobility
- Stool impaction
Pelvic Floor Dysfunction: Inciting Factors

- Childbirth
- Nerve damage
- Muscle damage
- Radiation
- Tissue disruption
- Radical pelvic surgery
Pelvic Floor Dysfunction: Promoting Factors

- Obesity
- Lung Disease
- Smoking
- Menstrual cycle
- Constipation
- Recreation
- Occupation

- Medications
- Menopause
- Infection
- Surgery
Pelvic Floor Dysfunction: Decompensating Factors

- Aging
- Dementia
- Debility
- Disease
- Medications
Types of Incontinence

- Stress
- Urge
- Mixed
- Overflow
- Functional
- Complete
Comparative Prevalence of Different Types of Incontinence

- Stress: 50%
- Urge: 14%
- Mixed: 32%
- Others: 4%

UI Symptoms Do Not Equate to Underlying Conditions

- 4 out of 5 women with incontinence have stress symptoms (pure or combined with urge)

Screening and Diagnosis

Common clinical assessments:

- A medical history
- A complete physical examination (with particular focus on abdomen and genitals)
- A urine sample to test for infection, traces of blood or other abnormalities
- A neurological exam to identify sensory problems
Screening and Diagnosis

**Supplementary Tests** – to provide more information about your particular bladder problem:

- Pad test
- Record of dietary intake and bowel evacuation

**Specialized Tests** – only necessary when it is difficult to find a cause for the bladder condition:

- Cystoscopy
- Urodynamics
- Other imaging tests
Stress Urinary Incontinence

- An involuntary loss of a small quantity of urine that occurs during physical activity, such as:
  - coughing, sneezing, laughing, exercise

- Results from weakened pelvic support of the urethra and/or weakness of the sphincter muscle of the urethra.
  - It may be due to the effects of childbirth or menopause on the pelvic structures

- The most common type of bladder control problem in younger and middle-aged women
Predominant Risk Factors for Stress Urinary Incontinence

Gender

Childbirth

Obesity

SUI Occurs When Bladder Pressure > Urethral Pressure

- Cough control, weight loss
- Surgery
- Exercise, meds
Non-Surgical Treatment Options

- Behavioural therapy
- Kegel exercises
- Biofeedback
- Vaginal cones
- Medication
- Pessaries
Behavioural Therapy

• Implement lifestyle adjustments in regards to fluid intake
  – Aim to consume 2,000 ml per day
  – Consume majority fluids before 6 p.m.
  – Avoid caffeine, carbonated

• Lose weight if carrying excess weight

• Bladder drill
  – Increase intervals between voids
  – Aim to void every 2-4 hours
# Behavioural Therapy

<table>
<thead>
<tr>
<th>PRO</th>
<th>Low risk intervention proven to provide significant improvement; requires minimal additional physical examination, diagnostic testing, staff time or training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to patient</td>
<td>Low</td>
</tr>
<tr>
<td>Success rate</td>
<td>50% after a low-intensity behavioural therapy program using bladder training; for overweight/obese women, a reduction of 5 to 10% in the baseline weight results in approx. 50% reduction in the frequency of incontinence</td>
</tr>
</tbody>
</table>
Kegel Exercises

Contract your pelvic muscles for 10 seconds, then relax the muscles for 10 seconds. Do this 10-15 times several times a day. Although shown here while lying down, these exercises can be done during a variety of daily activities, such as sitting in a meeting, while stopped in your car at a traffic light or when talking on the phone.
# Kegel Exercises

<table>
<thead>
<tr>
<th>Pro</th>
<th>Most cost effective, accepted first-line intervention with no associated complications or side effects</th>
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<tbody>
<tr>
<td>Con</td>
<td>More than 30% of incontinent women are unable to contract their pelvic floor muscles correctly. Over 50% of women are unable to locate their pelvic floor muscles or are not compliant with exercise</td>
</tr>
<tr>
<td>Cost to patient</td>
<td>No cost</td>
</tr>
</tbody>
</table>
Biofeedback

• Biofeedback allows pelvic floor muscle activity to be monitored and displayed to the patient, thus enabling her to visualize the contraction.

• Biofeedback can be performed by monitoring:
  - EMG activity of the muscles
  - Pressure generated by the muscles around a probe

• Biofeedback increases pelvic floor awareness and patient motivation.
Vaginal Cones

- Pelvic floor exercise program with vaginal cones is performed by inserting a cone of increasing weight into the vagina.
- The cone is held in place by a slight passive (biofeedback) and active contraction.
- The objective is to be able to hold the heaviest cone that can be comfortably supported.
# Vaginal Cones

<table>
<thead>
<tr>
<th>Pro</th>
<th>Cost effective, individualized for each woman, no adverse effects, no supervision required, done in home privacy, ease of use, fast learning curve, short daily commitment</th>
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</thead>
<tbody>
<tr>
<td>Cost to patient</td>
<td>Low</td>
</tr>
<tr>
<td>Success rate</td>
<td>54 – 84%</td>
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Medications

Imipramine 10-20mg BID
• 3 descriptive studies
• Subjective improvement rates 60-70%
# Medications

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<tr>
<th>Pro</th>
<th>May be useful in patients who are reluctant to undergo surgery or who have significant comorbidities</th>
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<tbody>
<tr>
<td>Con</td>
<td>All medications are off label, adverse effects may be associated with tricyclic anti-depressants</td>
</tr>
<tr>
<td>Cost to patient</td>
<td>Low</td>
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<tr>
<td>Success rate</td>
<td>54 – 64%</td>
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Incontinence Pessaries

• Designed for placement under the urethra
• Provides mechanical support to the urethra
Uresta Pessary
## Pessaries

<table>
<thead>
<tr>
<th>Pro</th>
<th>Low risk treatment used since ancient times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to patient</td>
<td>Low</td>
</tr>
<tr>
<td>Success rate</td>
<td>About 40%</td>
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Burch retropubic urethropexy

- Cooper's ligament
- Finger elevates vagina while sutures are tied under gentle tension
- Clarke knot pusher
- Paravaginal "sting" lifts urethra
Tension-free Vaginal Tape (TVT)
TVT Final Position
TVT Close-Up View
Trans-Obturator Tape
Surgical management

<table>
<thead>
<tr>
<th>Pro</th>
<th>Definitive treatment</th>
</tr>
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<tr>
<td>Cost to patient</td>
<td>2-4 weeks off work.</td>
</tr>
<tr>
<td>Success rate</td>
<td>About 90% five year.</td>
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Take-Home Message

• Initiate the discussion
• Approach problem with empathy and understanding
• Determine under what circumstances leakage occurs
• Suggest optimizing fluid consumption (including avoidance of caffeine)
• Address constipation, chronic cough, smoking, weight loss
• Assess for exacerbating medications
Take-Home message

- Look for atrophic changes
- Look for pelvic floor weakness
- Teach Kegel exercises
- Consider Kegel adjuncts
  - Vaginal cones
  - Biofeedback
- Consider medication
- Consider a pessary
- Consider surgery
Resources

• International Continence Society
  http://www.icsoffice.org
• Canadian Continence Foundation
  http://www.continence-fdn.ca
• Women’s Bladder Health (Maritimes)
  http://womensbladderhealth.com
• Canadian Nurse Continence Advisors
  http://www.cnca.ca
• American Urogynecologic Society
  http://www.augs.org/